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ABSTRACT

This packet of student materials contains a variety of worksheet activities dealing with science graphs and science word games. These reproducible materials deal with: (1) bar graphs; (2) line graphs; (3) circle graphs; (4) pictographs; (5) histograms; (6) artgraphs; (7) designing your own graphs; (8) medical prefixes; (9) color prefixes; (10) scientific prefixes; (11) organ prefixes; (12) prefixes relating to the head; (13) scientific suffixes; (14) medical specialists; (15) science analogies; (16) anachronisms; and (17) animal and plant art words. An answer key is provided for all of the questions presented in the book. (TW)

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SUPERIFIC SCIENCE

SCIENCE GRAPHS AND WORD GAMES

by

Lorraine Conway

illustrated by Linda Akins

Cover by Nancee Volpe

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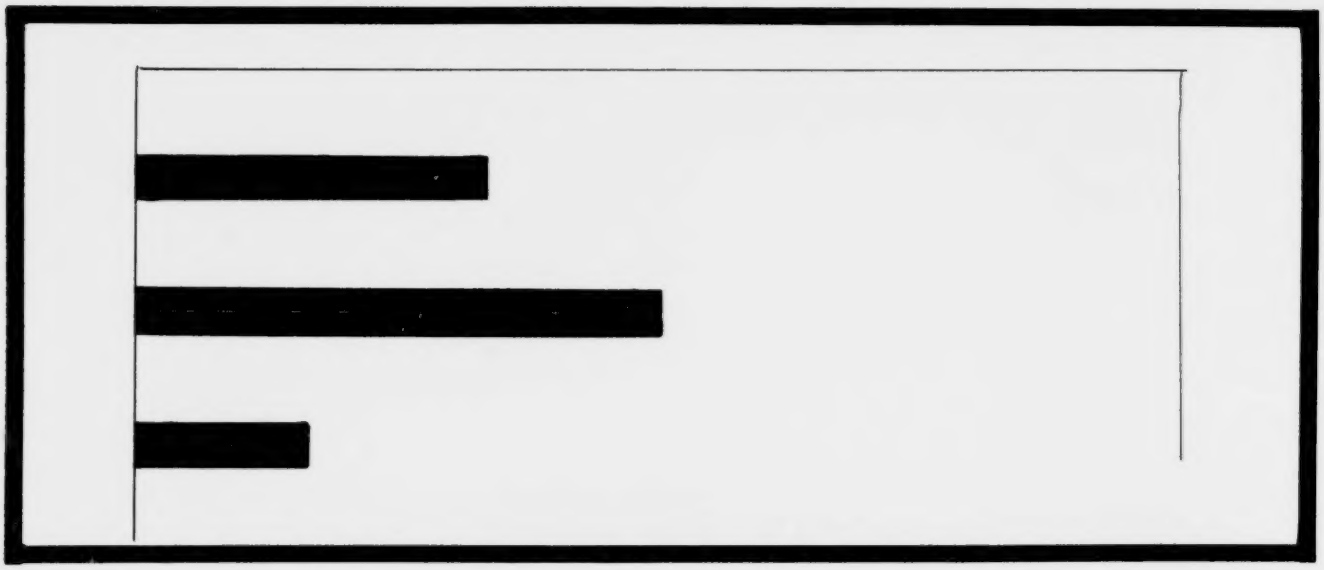


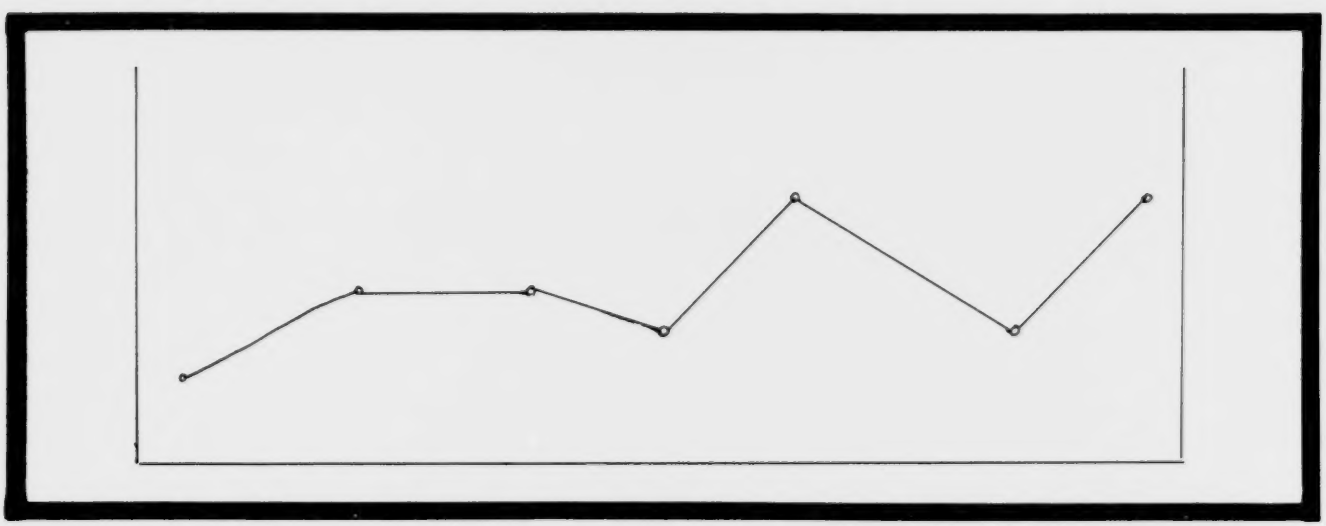
INTRODUCTION

A VARIETY OF GRAPHS

PURPOSE: The purpose of making graphs is to state in a visual manner statistics which could be confusing in written form. Graphs are easier to read than tables of numbers; however, the information must be accurate, depicted clearly, and effectively illustrated.

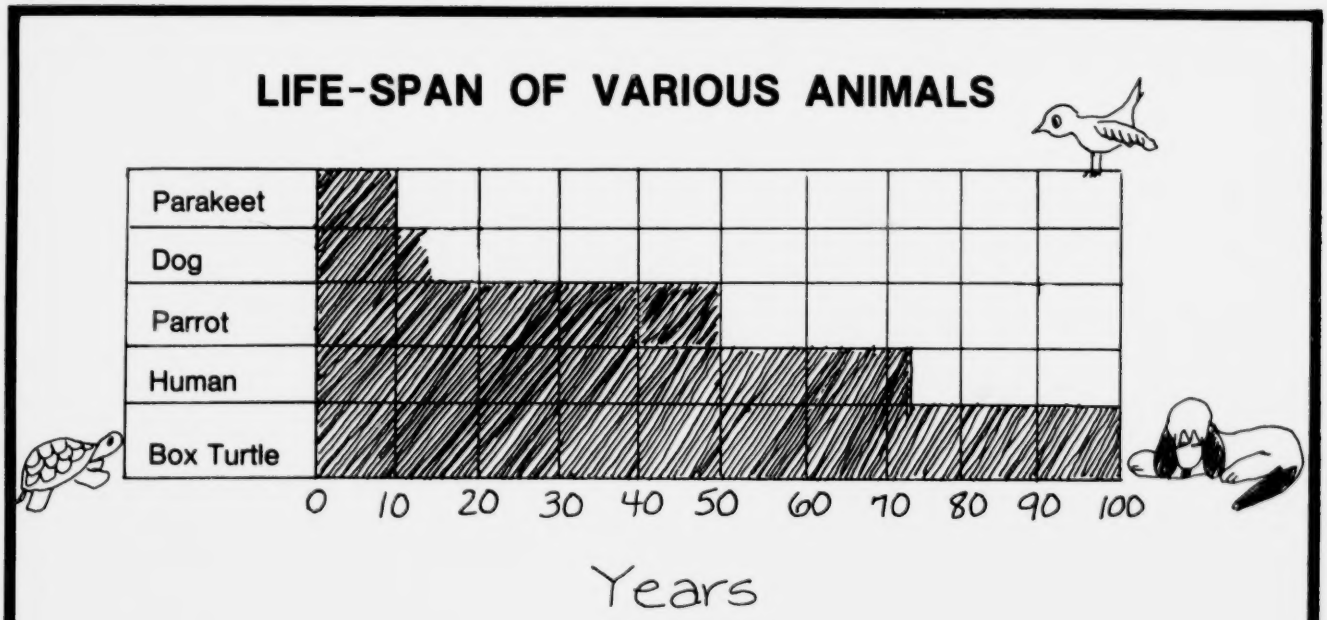
MATERIALS: Information and graphs as provided, black pens, colored pens or pencils.

PROCEDURE: Follow the instructions and examples; plot the given statistics as directed.



BAR GRAPHS

Bar graphs are among the simplest types of graphs; they can run either vertically (up and down) or horizontally (left to right). The same information used on a line graph in most cases can be used on a bar graph. Here is an example of a horizontal bar graph.



Statistics:

Parakeet	10 years
Dog	13 years
Parrot	50 years
Human	72 years
Box Turtle	100 years

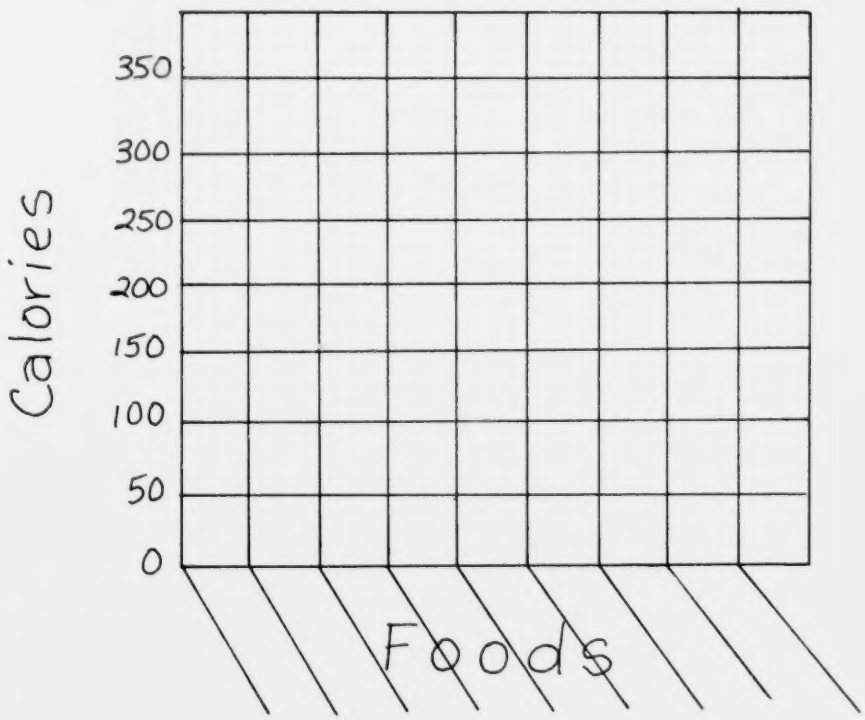
Were you able to read the bar graph without difficulty? _____.

Was the graph more meaningful than the table of statistics? _____.

BAR GRAPHS (Cont'd.)

Using the following statistics construct a vertical bar graph:

CALORIE CONTENT OF SOME COMMON FOODS



Statistics:

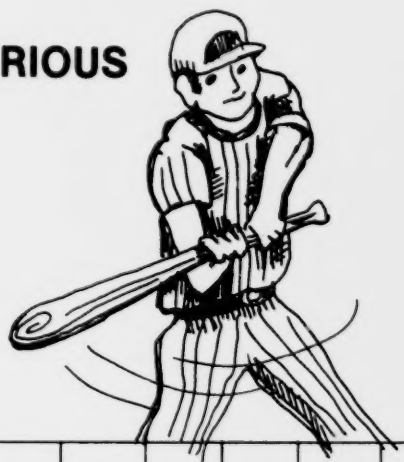
Bread, cracked wheat, one slice	60 calories
Apple, average-size	80 calories
Chocolate bar	250 calories
Milk, 8 oz. glass	150 calories
Milk, skim, 8 oz. glass	90 calories
Salami, 4 oz.	350 calories
Hamburger, ground, lean, broiled, 4 oz.	250 calories

BAR GRAPHS (Cont'd.)

Construct a horizontal bar graph with these statistics:

Activities	Calories Consumed Per Hour
Baseball	400
Piano playing	220
Football	600
Jogging	500
Walking	200
Writing	150

CALORIES CONSUMED BY VARIOUS ACTIVITIES PER HOUR



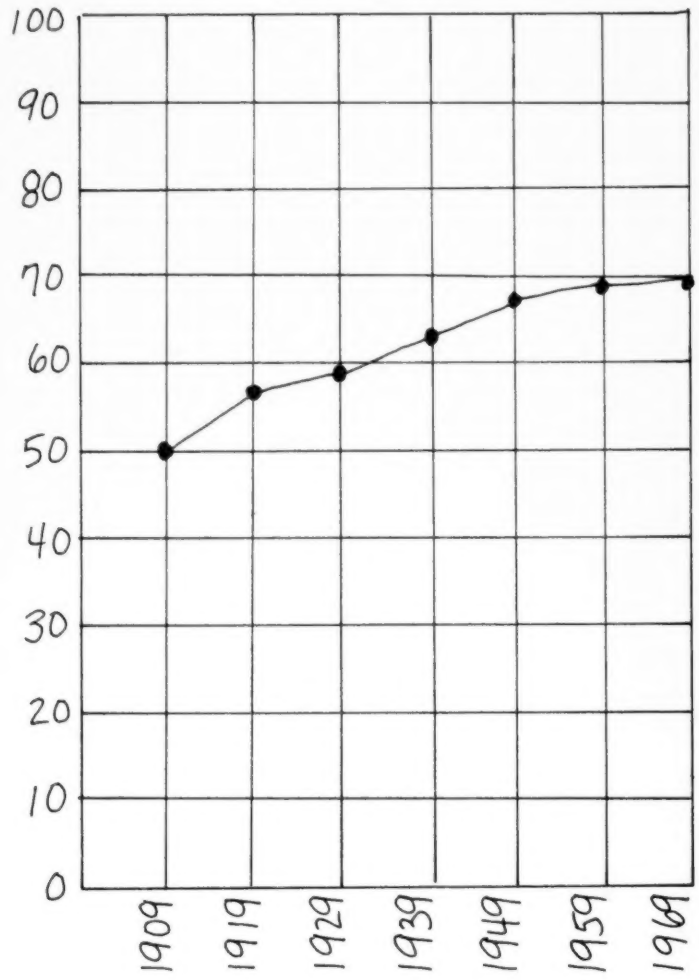
LINE GRAPHS

A line graph presents statistical material by means of lines drawn on graph paper. The information is first plotted on the graph with dots which are later joined with lines.

Below is an example of a line graph.

EXPECTATION OF LIFE IN THE UNITED STATES FOR MALES

1909....50 years
1919....56 years
1929....59 years
1939....63 years
1949....66 years
1959....67½ years
1969....68 years

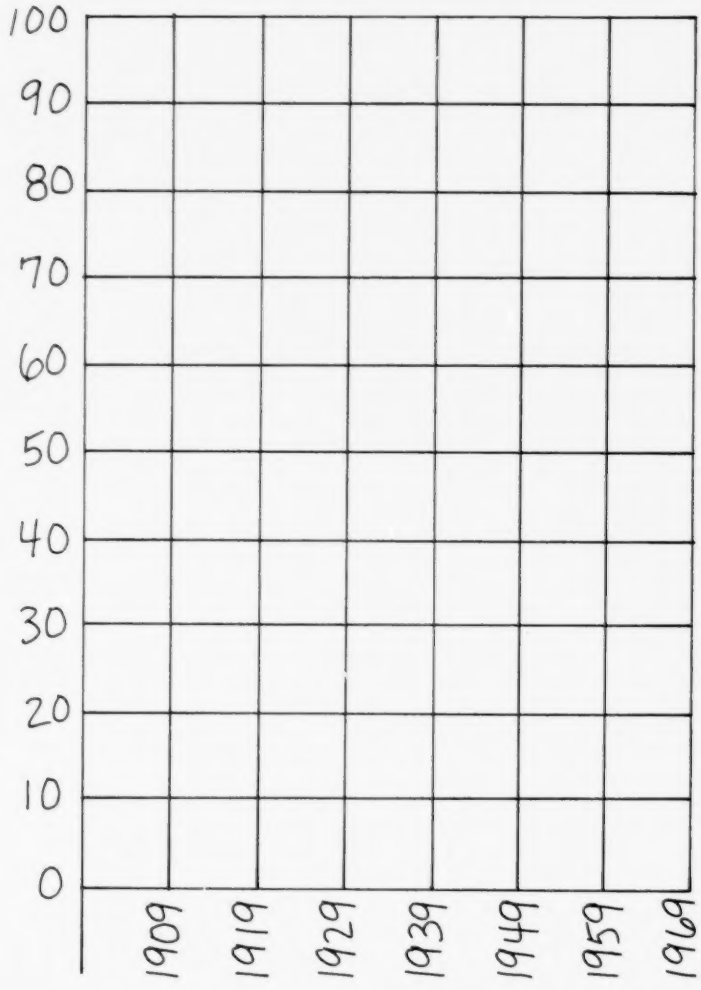


LINE GRAPHS (Cont'd.)

Make a line graph using these statistics for females:

1909....53 years
1919....58 years
1929....62 years
1939....67 years
1949....72 years
1959....74 years
1969....75 years

EXPECTATION OF LIFE IN THE UNITED STATES FOR FEMALES



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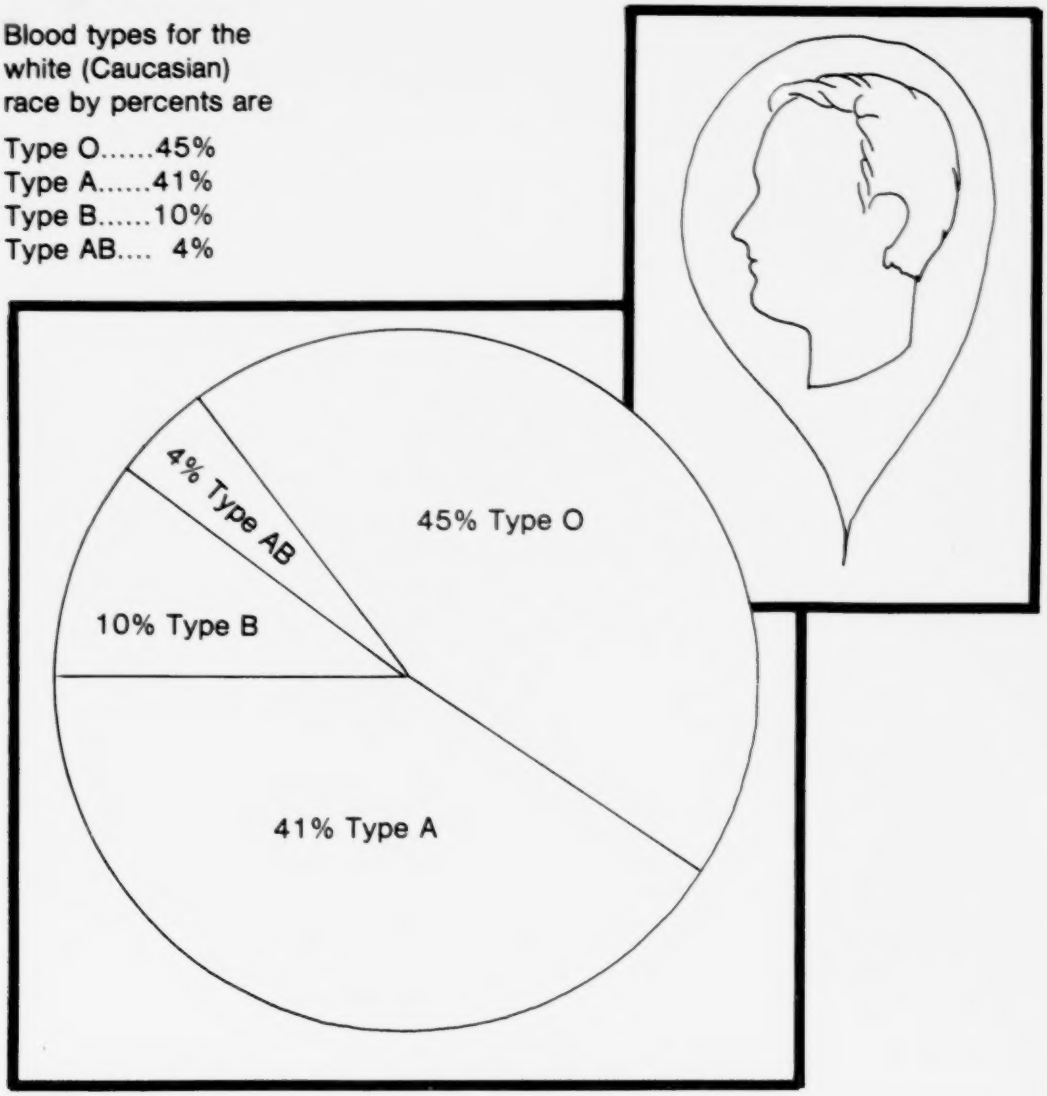
CIRCLE GRAPHS

A circle or pie graph plots information in still another form. A full circle, or 360 degrees, stands for 100 percent; half circle, 50 percent, etc. Below is an example of a circle graph.

Blood types for the white (Caucasian) race by percents are

Type O.....45%
Type A.....41%
Type B.....10%
Type AB.... 4%



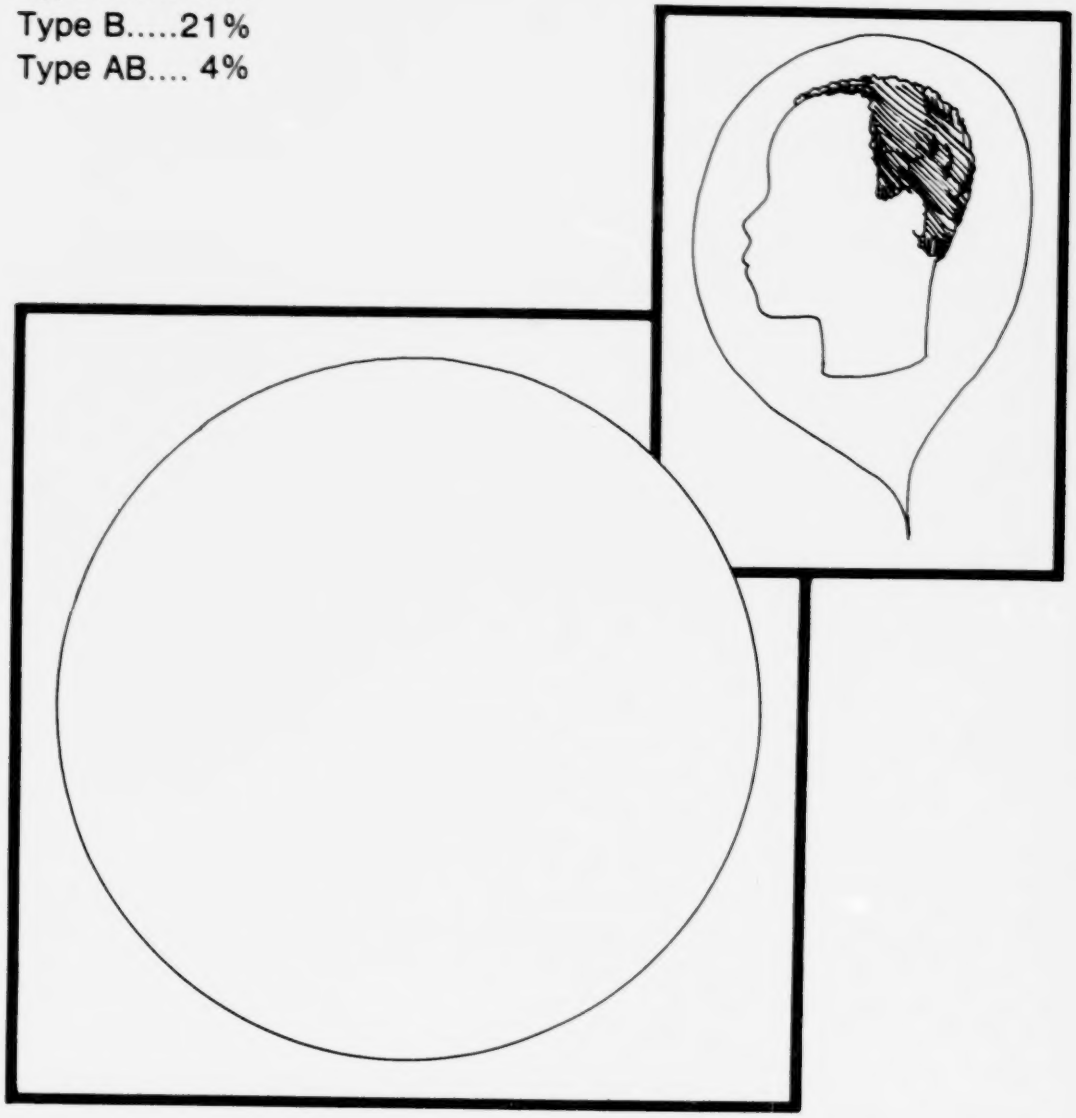
BLOOD TYPES OF THE WHITE RACE BY PERCENTS

You may estimate the percent of the graph for each blood type, but if you want your graph to be accurate, use a protractor and convert the percent into degrees by multiplying each percent by 3.6; thus 45 percent becomes 162 degrees; 41 percent becomes 147.6 degrees; 10 percent becomes 36 degrees and 4 percent becomes 14.4 degrees.

CIRCLE GRAPHS (Cont'd.)

Using the following information, plot the blood types by percents for the black race:

Type O.....48%
Type A.....27%
Type B.....21%
Type AB.... 4%

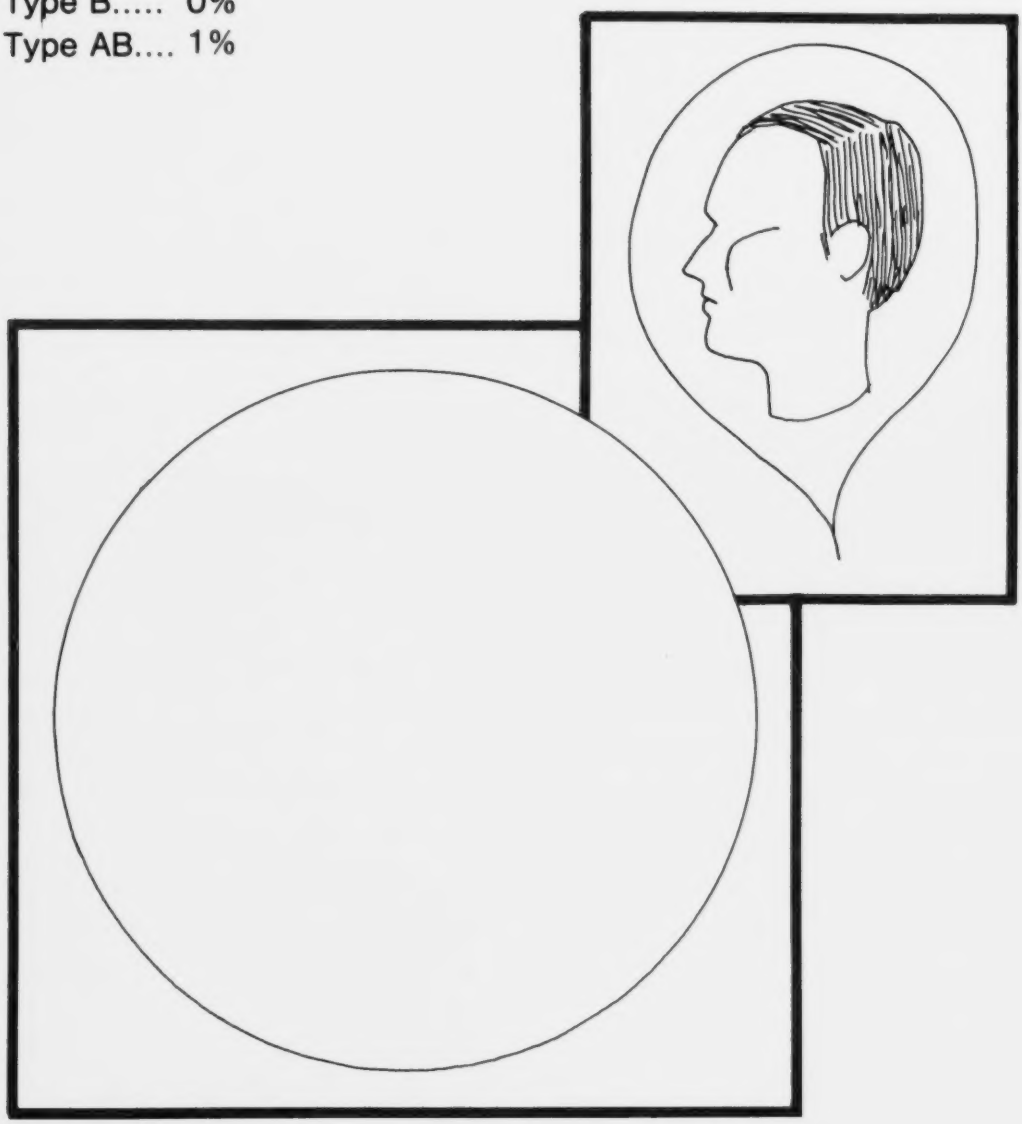


BLOOD TYPES FOR THE BLACK RACE BY PERCENTS

CIRCLE GRAPHS (Cont'd.)

Using the following information, plot the blood types by percents for the native American race:

Type O.....23%
Type A.....76%
Type B..... 0%
Type AB.... 1%

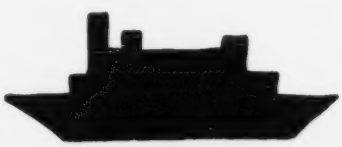


BLOOD TYPES FOR THE NATIVE AMERICANS BY PERCENTS

PICTOGRAPHS

A pictograph is a special type of bar graph in which a symbol is used to represent a number. Some examples of symbols are given below.

= people, men, population



= ships, transportation

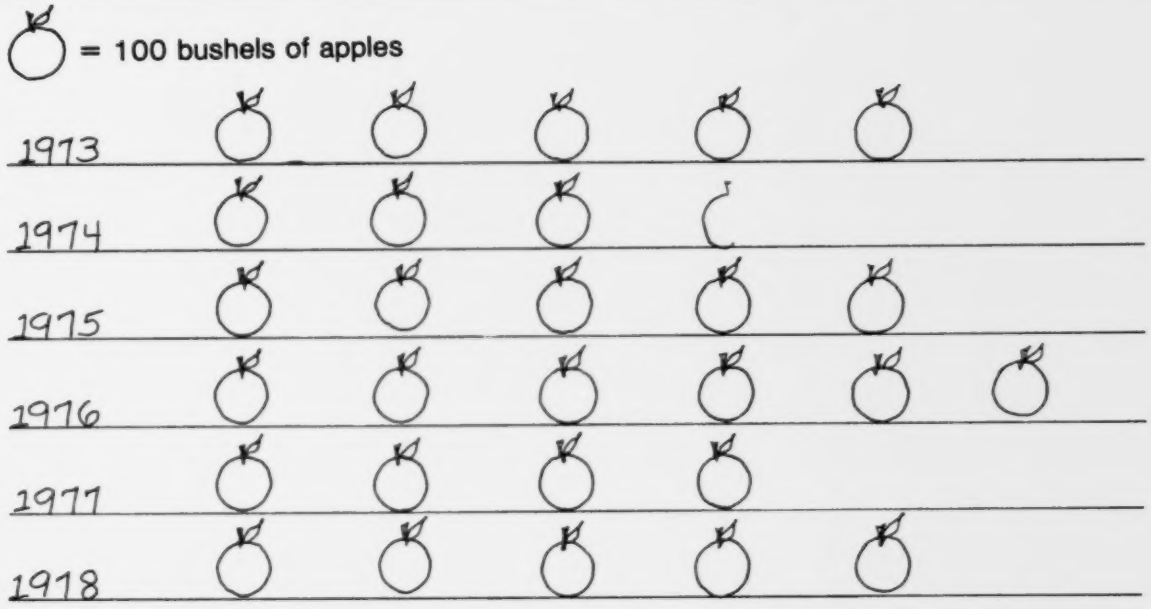
= automobiles

= factory, industry

The symbol indicates a number and the total number of symbols on the lines of the graph gives the statistic. To make a pictograph, it is wise to make a stencil of the figure you wish to use or else use folded gummed paper. Trace the figure on the gummed paper, and then cut out the figures. Place neatly on the lines of your graph. Be sure you keep your figures directly under each other.

PICTOGRAPHS (Cont'd.)

Example of a pictograph



Number of Bushels of Apples Harvested on the Smith Farm 1973 - 1978

Read the number of bushels of apples from the Smith Farm from 1973 to 1978.

1. Which year had the best harvest? _____
2. Which year had the worst harvest? _____
3. What was the average harvest from 1973 to 1978? _____
4. What does the half symbol in 1974 mean? _____

   _____
5. What would one quarter of a symbol indicate? _____

   _____

PICTOGRAPHS (Cont'd.)

Using the following set of statistics, make a pictograph of the total number of different species of vertebrate (having a backbone) animals:

Fish	30,000 different species
Amphibians	2,500 different species
Reptiles	5,000 different species
Birds	8,500 different species
Mammals	4,500 different species

First design a symbol for each group of animals and make a key.

Animal	Symbol
Fish	
Amphibian	
Reptile	
Bird	
Mammal	

Let each symbol for fish, amphibians, reptiles, birds, and mammals represent 2,000 different species; for numbers less than 2,000 use an appropriate portion of a symbol. Fill in the pictograph below.

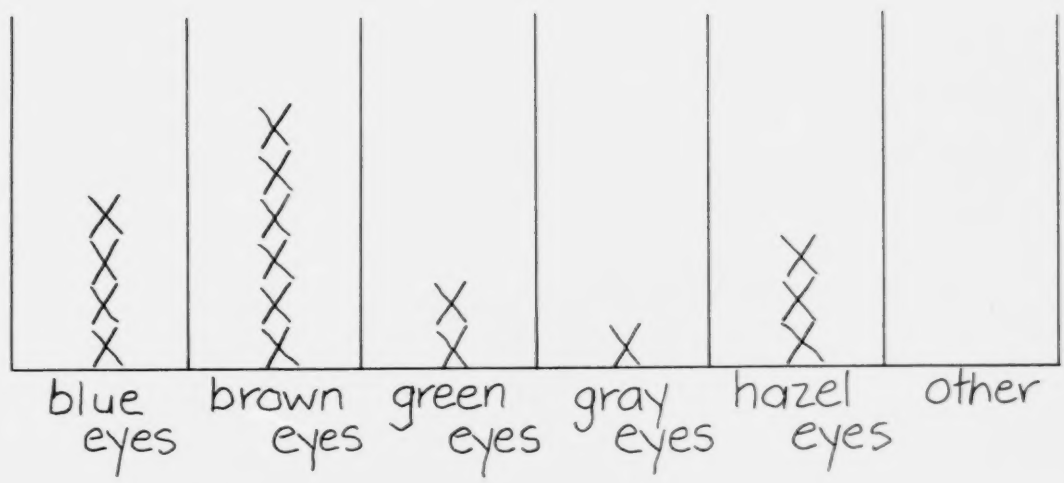
TOTAL NUMBER OF DIFFERENT SPECIES OF VERTEBRATES	
VERTEBRATE ANIMAL	NUMBER OF DIFFERENT SPECIES
Fish	
Amphibians	
Reptiles	
Birds	
Mammals	

HISTOGRAMS

A histogram is a special type of graph composed of a horizontal line and vertical X's. Each X represents a unit showing how often something occurs. The example shows how often various human eye colors occur in a class. For each student in the class having blue eyes, an X was placed in the vertical column under blue eyes; the same was done for brown eyes, green eyes, gray eyes, etc. On the next page make a histogram for eye colors of your class; this may also be done on the chalkboard with each student putting his own X in the proper column.

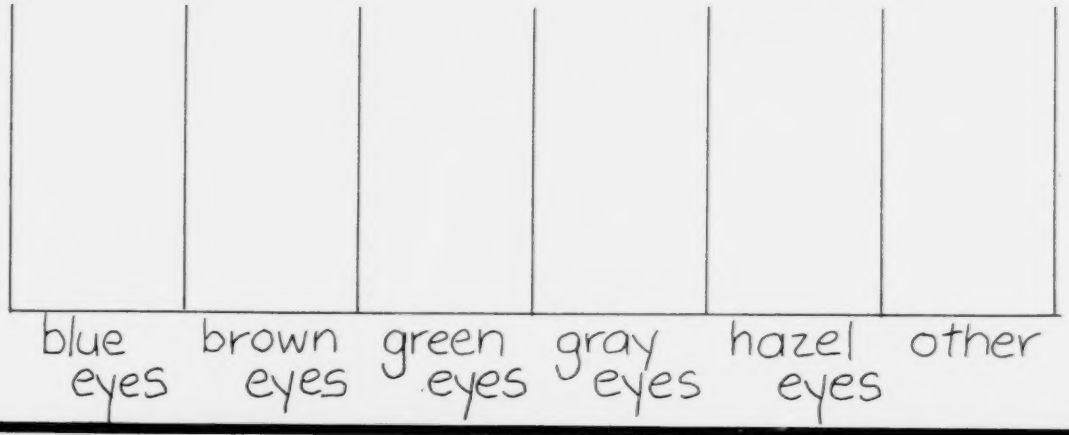
EXAMPLE:

A HISTOGRAM SHOWING EYE COLORS FOR YOUR CLASS



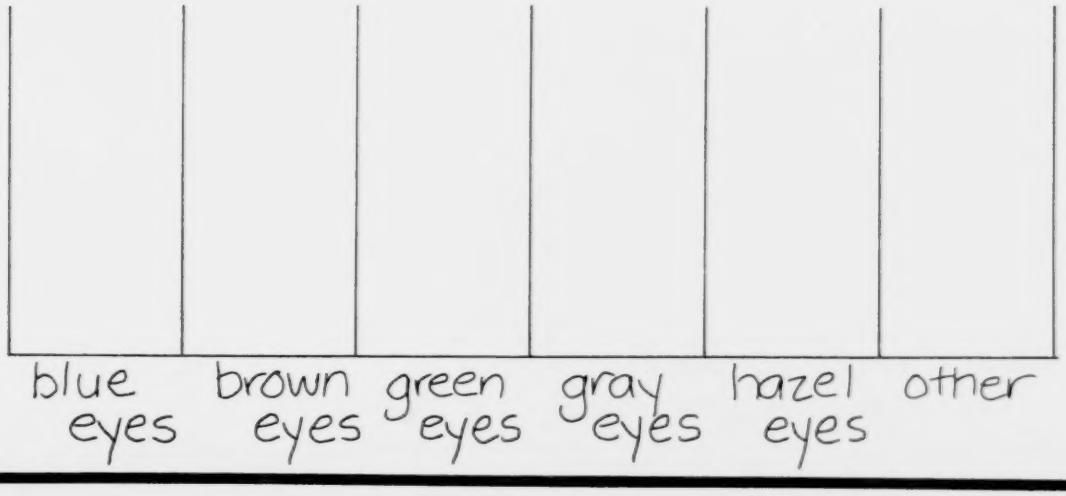
A HISTOGRAM SHOWING EYE COLORS FOR A SCIENCE CLASS

To show how often the various colors for eyes occur in your class, make a histogram by placing vertical X's to indicate the frequency each color occurs. Decide on the color of each student's eyes and place an appropriate X in that column, one X per student.



A HISTOGRAM SHOWING EYE AND HAIR COLOR COMBINATIONS

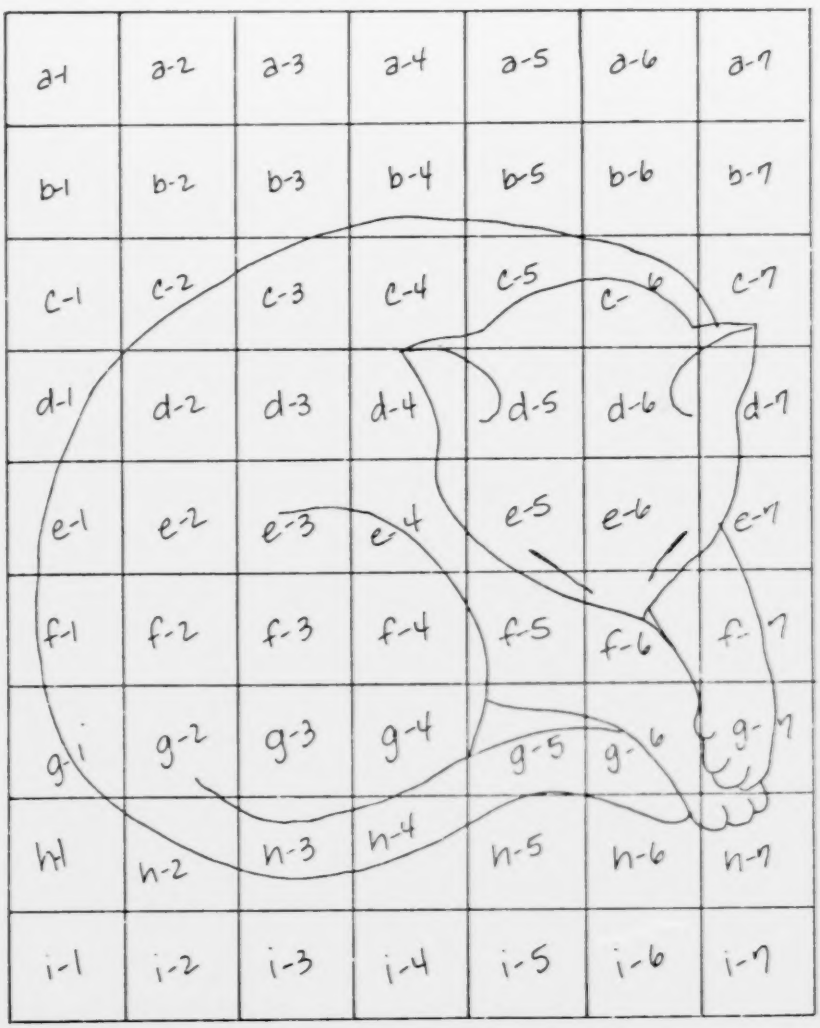
On another histogram chart two variables by using colored pens, pencils or chalk to make the X's. Use yellow for blond hair, brown for brown hair, red for red hair, etc. You will then be able to see at a glance how many students with blue eyes have blond hair, brown hair, etc. Continue doing the same until you have all the eye and hair color combinations for the entire class. This can be done on the chalkboard using chalk.



ARTGRAPHS

This activity combines artistic ability with the ability to follow instructions. Most of the squares on the following pages contain portions of a drawing. Test your artistic skill by copying exactly what you see into the correspondingly numbered boxes on the pages following the mixed-up squares. Be sure to put the right drawing into the correct box.

Below is an example of a correctly completed artgraph.



ARTGRAPHS (Cont'd.)

h-7	g-3	b-5	b-2	h-3	i-7	a-2
h-2	g-6	i-4	b-4	b-1	h-1	f-6
i-6	a-3	g-4	a-4	b-3	e-2	b-7
g-7	a-5	a-6	f-4	f-1	e-6	a-7
e-7	g-2	i-2	e-5	d-6	d-2	f-7
g-1	d-5	e-3	b-6	e-1	h-4	f-2
i-5	d-3	d-1	g-5	d-4	h-6	h-5
c-1	f-5	c-4	c-2	c-5	c-7	a-1
i-3	f-3	d-7	c-6	c-3	e-4	i-1

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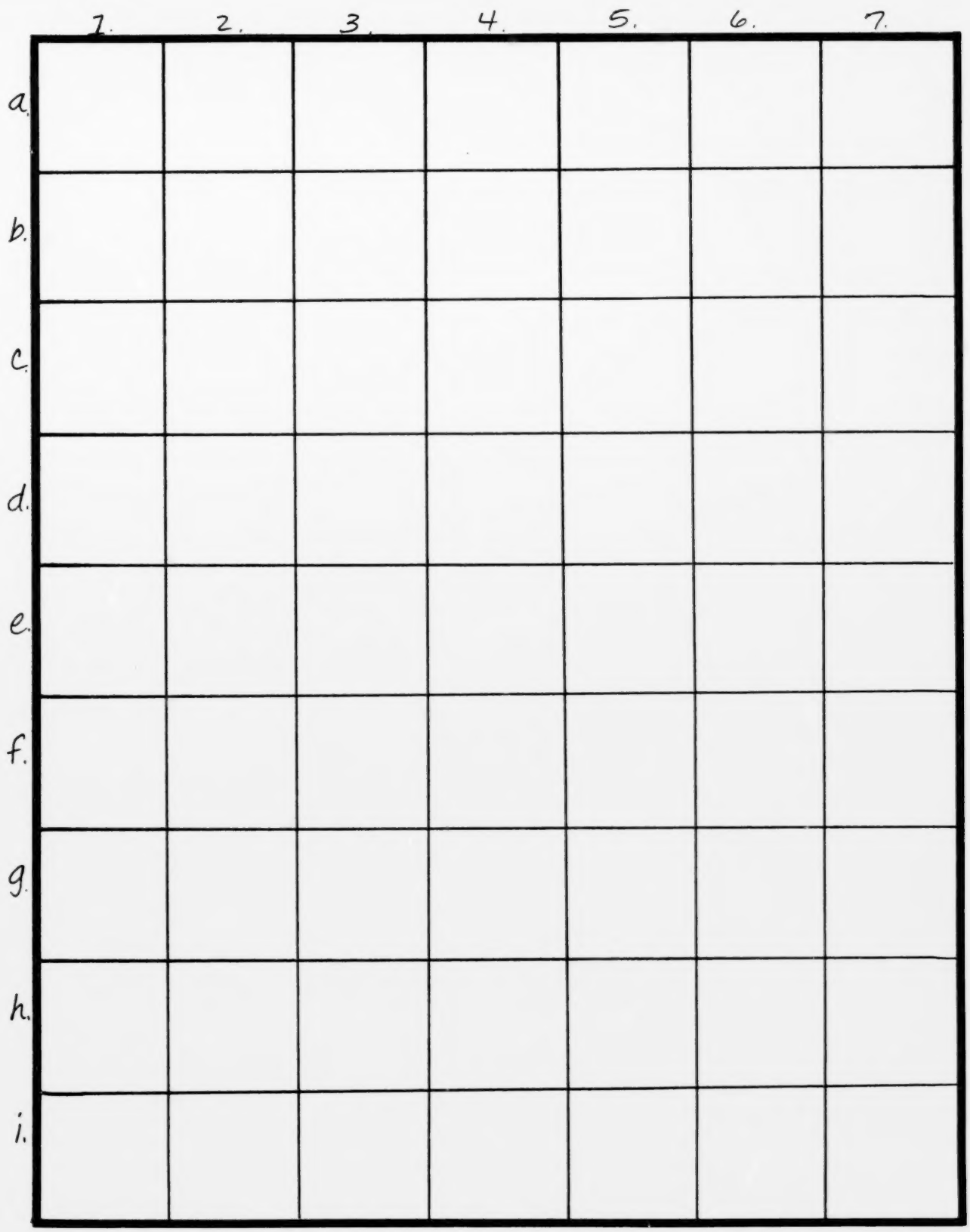
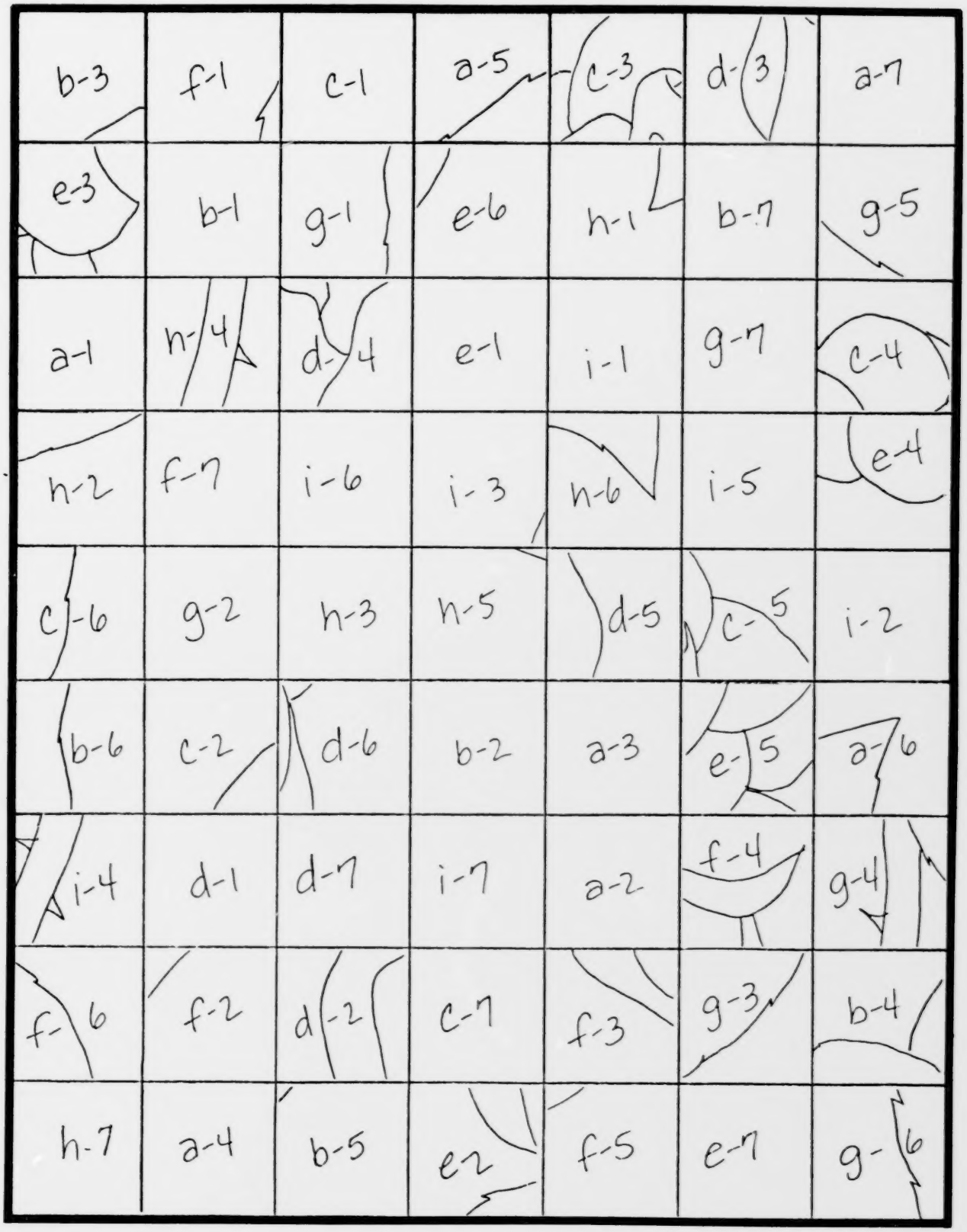
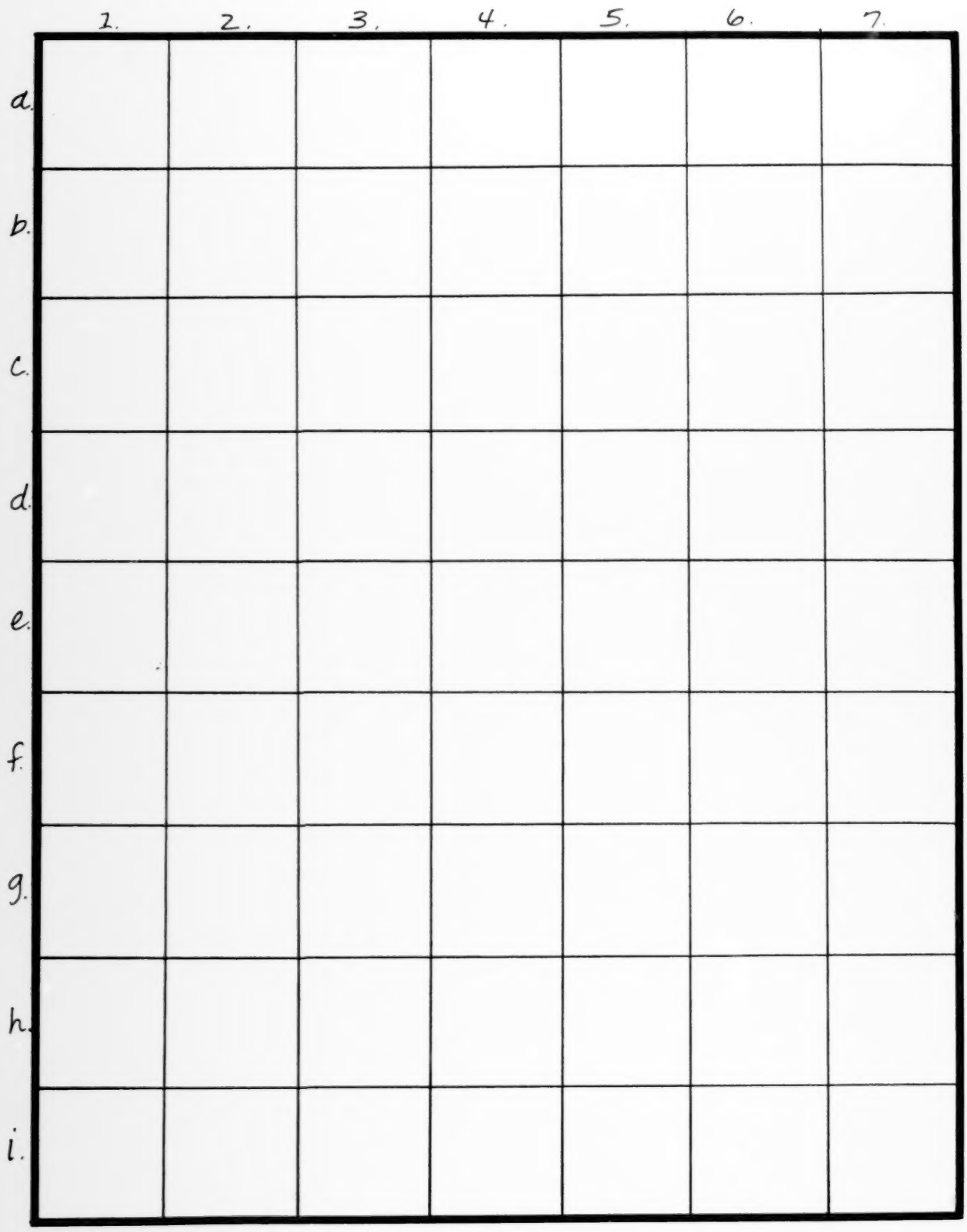
ARTGRAPHS (Cont'd.)



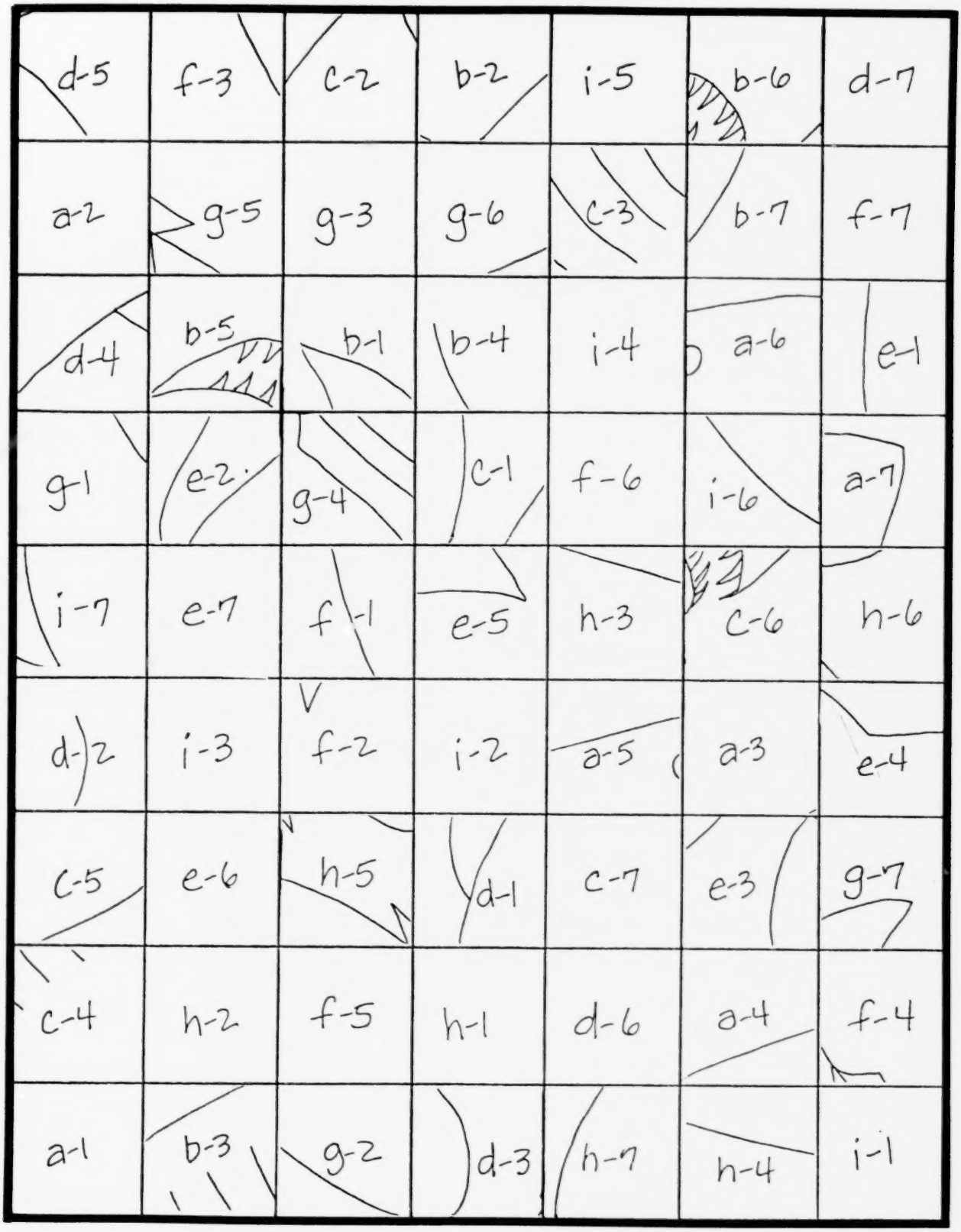
ARTGRAPHS (Cont'd.)



ARTGRAPHS (Cont'd.)



ARTGRAPHS (Cont'd.)



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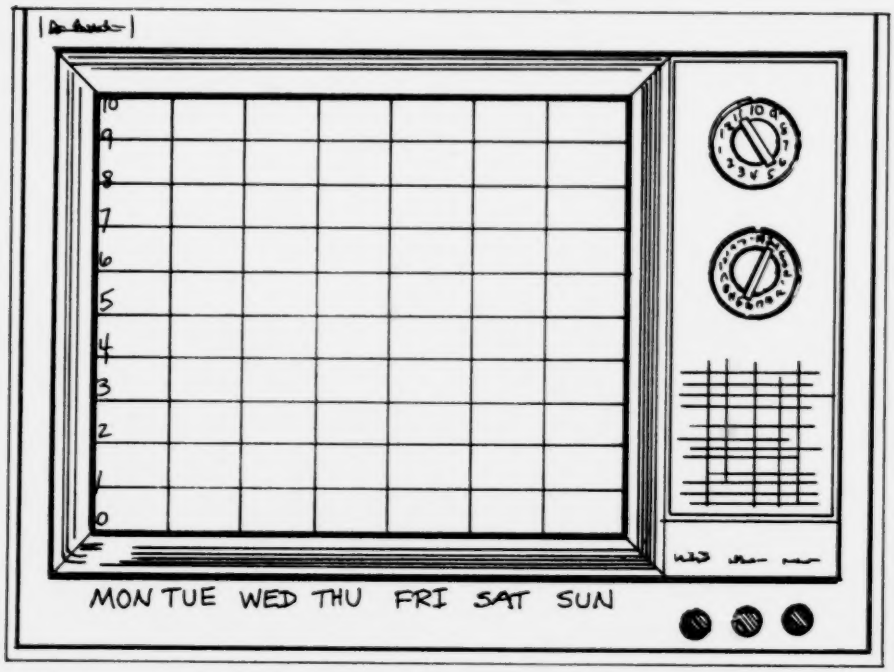
ARTGRAPHS (Cont'd.)

	1.	2.	3.	4.	5.	6.	7.
a.							
b.							
c.							
d.							
e.							
f.							
g.							
h.							
i.							

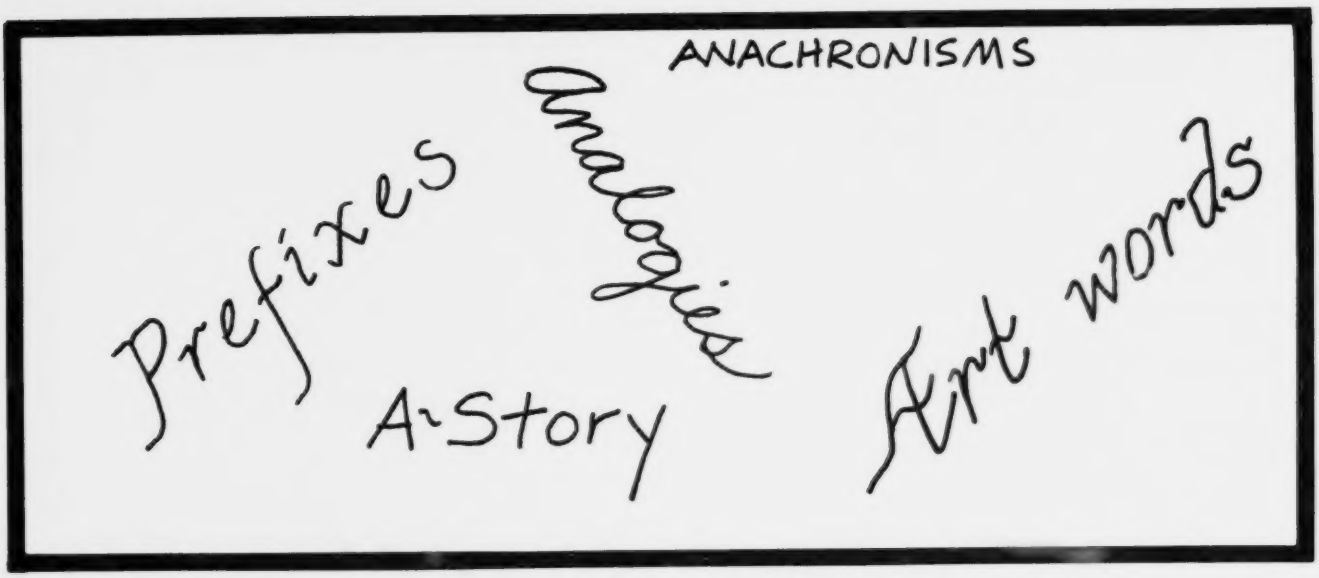
DESIGN A GRAPH

You are now ready to do some graph designing on your own. In addition to the graphs you have studied you can devise other ways to make your graphs more interesting and eye-appealing by the addition of suitable frames such as the one in the example below.



HOURS OF TELEVISION WATCHED FOR ONE WEEK

The next time you have a report to do, instead of using tables or columns of statistics, try a graph instead.



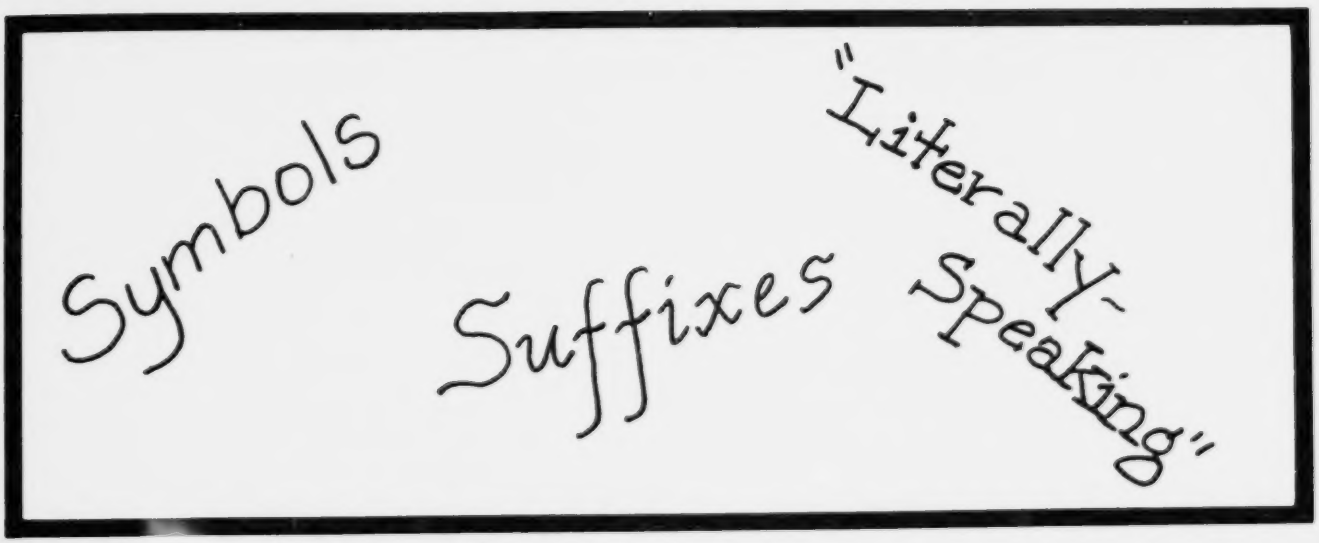
INTRODUCTION

WORD GAMES

PURPOSE: Much of the new material which a science student must learn is the complex nomenclature of scientific words and terms. The word games which follow are designed to acquaint, instruct and familiarize students with scientific terms and at the same time provide necessary learning in an interesting, imaginative way. Prefixes, suffixes, anachronisms, analogies, and scientific symbols will be explored.

MATERIALS: Copies of the following word games, one per student.

PROCEDURE: Follow the instructions given for each word game.



MEDICAL PREFIXES

Here is a list of common medical prefixes and their meanings. Some of these you have used before. See if you can use them in their proper places in the sentences on the next page.

neuro - nerve
cardi - heart
gastric - stomach
reni - kidney
pneu - lung
mal - bad
hepa - liver
hyper - over, too much

oto - ear
hypo - under, not enough
anti - against
rhino - nose
hyster - uterus
psycho - mind
pod - foot
toxic - poison

MEDICAL PREFIXES (Cont'd.)

1. If you suffer chest pains, it would be wise to see a _____ ologist.
2. _____ tension refers to high blood pressure.
3. An _____ biotic is made from microorganisms and is used to fight germs.
4. The doctor used an _____ scope to examine the child's ear.
5. The heroin addict contracted _____ titis, a liver disease sometimes transmitted by using unsterilized needles.
6. _____ aria is a disease once thought to be contacted from "bad" air.
7. After eating too much, the little boy had _____ pains.
8. Because of a bad cough, she was X-rayed for _____ monia.
9. _____ surgeons are doctors whose field of concentration is the nervous system.
10. The model had _____ plasty in order to look more beautiful.
11. Some beans have a _____ form shape.
12. _____ glycemia is a condition in which the concentration of sugar in the blood is low.
13. A common operation among women is a _____ ectomy.
14. Suffering from corns, the old man made an appointment with a _____ iatrist.
15. Too many aspirins can prove _____.
16. Tension may bring on _____ somatic illnesses.

COLOR PREFIXES

The following Greek prefixes for colors are often used in science terms; use them to complete the descriptions below.

leuko-, leuco-	white
melano-	black
erythro-	red
chlor(o)-	green
cyan(o)-	blue
xantho-	yellow
glauk(o)-, glauc(o)-	grey

1. _____-oid, appearing greyish in color as when one is ill or frightened.

2. _____-cyte, a red blood cell.

3. _____-ine, poisonous, greenish gas used in World War I.

4. _____-cyte, a white blood cell which contains a nucleus.

5. _____-dermic, yellowish coloring of the skin sometimes due to liver ailments.

6. _____-cyte, skin cells which produce dark brown and black pigments.

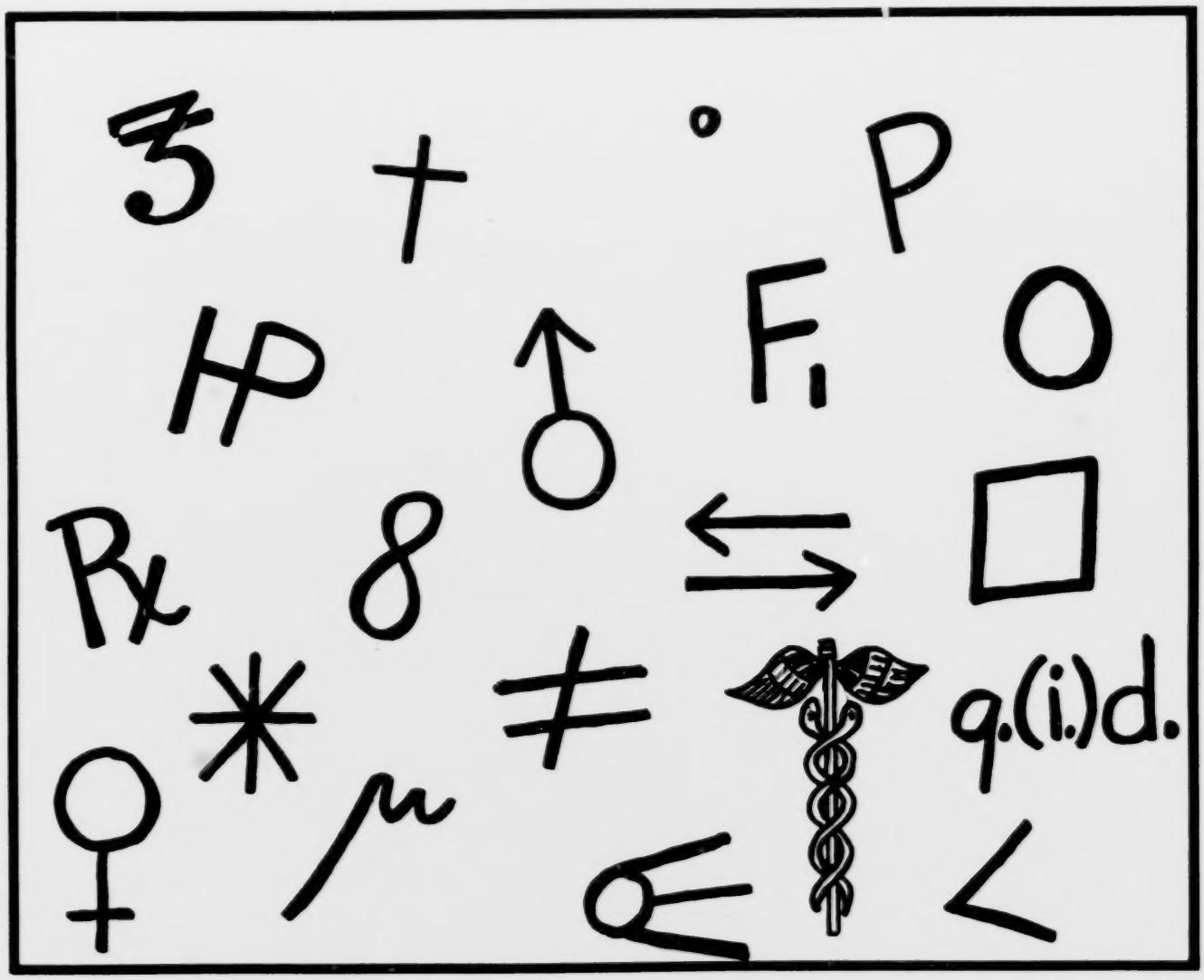
7. _____-ic, a type of bluish blood found in lobsters.

SCIENTIFIC SYMBOLS

PURPOSE: To become familiar with the more common symbols which are used in various branches of science.

MATERIALS: Copy of the symbols and their definitions, pencil or pen, dictionary for checking answers.

PROCEDURE: Use your imagination, the process of elimination, and memory to match the scientific symbol to its definition. Draw the symbol in the space provided next to the definition on the following page.



SCIENTIFIC SYMBOLS (Cont'd.)

1. _____ In biology, this symbol stands for the parental generation.

2. _____ In medicine, this symbol stands for death.

3. _____ This is the astronomical symbol for comet.

4. _____ This denotes a reversible reaction in chemistry.

5. _____ In biology and medicine, this symbol stands for the male.

6. _____ In heredity and genetics, this symbol denotes the male.

7. _____ This symbol means not equal, mathematically speaking.

8. _____ This is the symbol for infinity in biology and medicine.

9. _____ This symbol comes from the Latin word *recipe* which means *take,* as in a prescription.

10. _____ Denotes the medical symbol for birth.

11. _____ Means the first generation in biology, genetics.

12. _____ The biological and medical symbol for female.

13. _____ The symbol for female in heredity and genetics.

14. _____ Means degrees in chemistry.

15. _____ This means horsepower to an electrician or physicist.

16. _____ Stands for the micron, one millionth of a meter.

17. _____ In geometry, this stands for angle.

18. _____ Ounce, in medicine and pharmacology.

19. _____ Latin for quarter (in) die, four times a day. Used in medicine and pharmacology.

20. _____ This is the symbol of the medical profession.

ORGAN PREFIXES

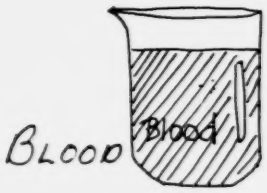
The following prefixes denote certain organs in humans and animals. Study them.

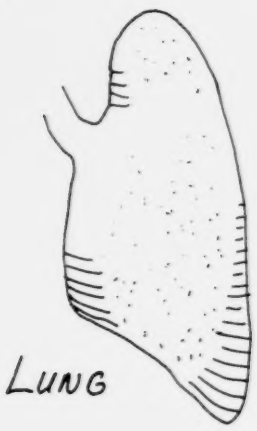
hepato-	liver
nephro-, reno-	kidney
cardio-	heart
pneumo-, pulmono-	lung
pancreato-	pancreas
gastro-	stomach
hemo-	blood
encephalo-	brain
osteo-	bone
entero-	small intestine

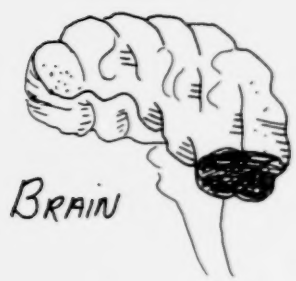
On the following page you will be given the names of ten diseases each using one of the above prefixes. Draw a line from the name of the disease to the organ affected by the disease. In the space below make a list of any words you know which contain the above prefixes.

ORGAN PREFIXES (Cont'd.)

Using lines.match the name of the disease to the appropriate organ.







nephritis

cardiac attack

hemophilia

gastritis

hepatitis

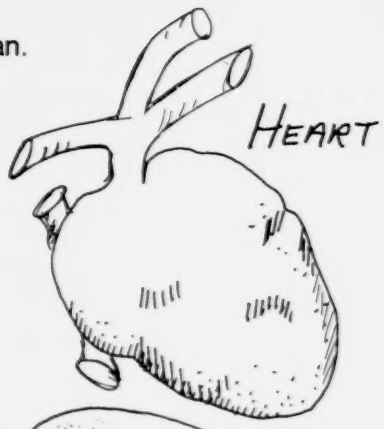
pneumonia

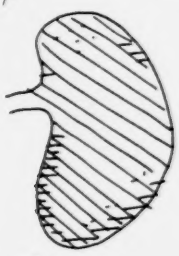
encephalitis

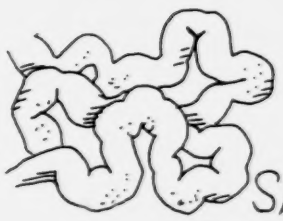
pancreatitis

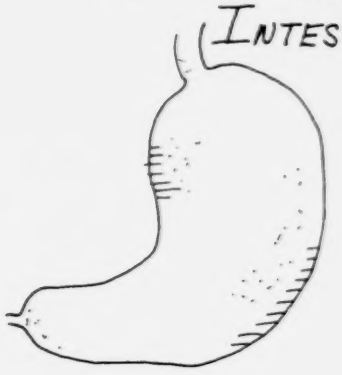
enteritis

osteomyelitis

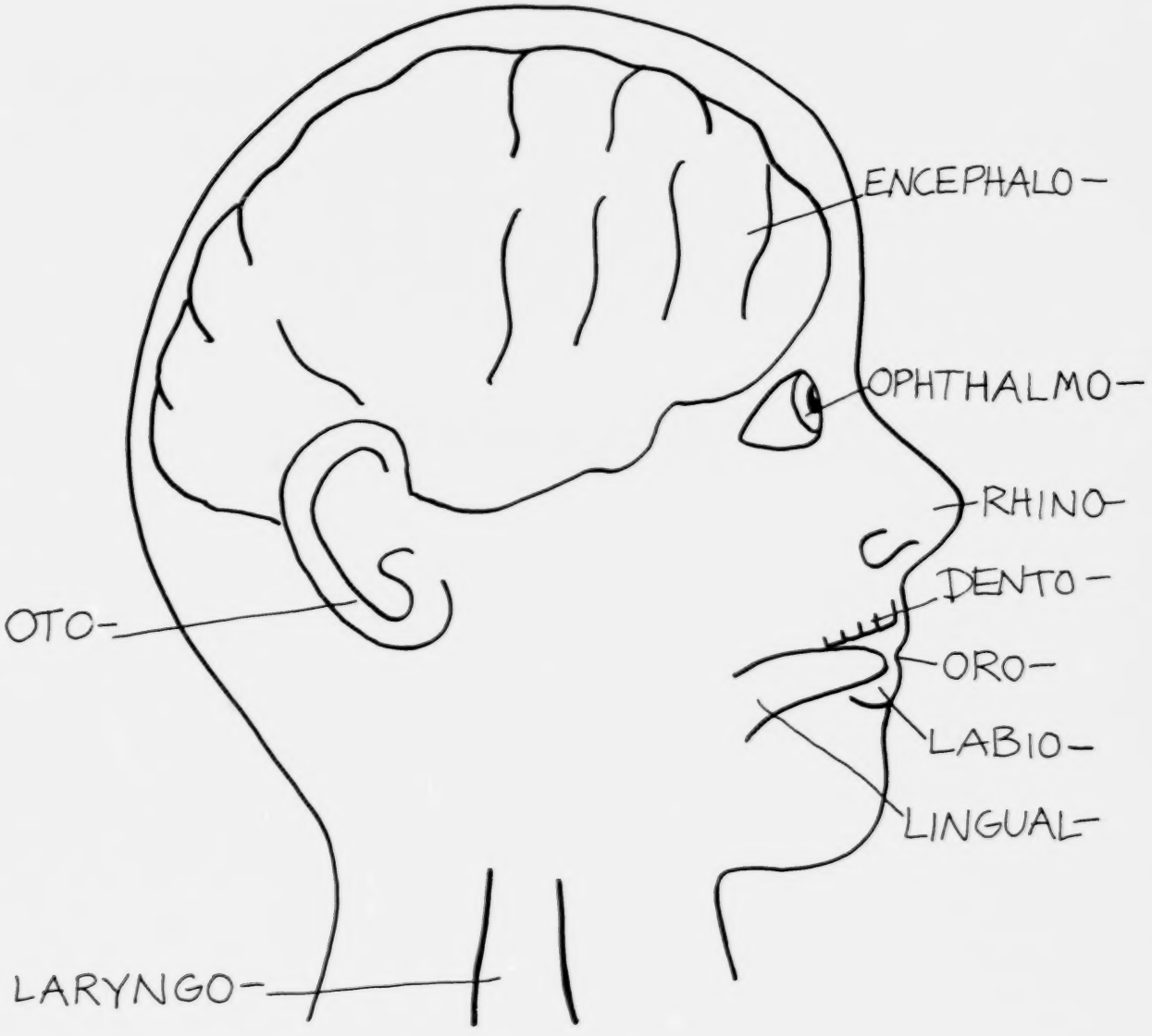








HEAD (CEPHALO-)



PREFIXES RELATING TO THE HEAD

PREFIXES RELATING TO THE HEAD (Cont'd.)

The scientific and medical prefixes on the preceding page may be placed before a root word to change its meaning or to make new words. Once you learn these prefixes they can become valuable to you in the understanding of many scientific terms.

Using the drawing for reference, complete the matching below.

linguist	dentist	laryngitis	megacephalic
encephalitis	oral	ophthalmologist	labioma
rhinoplasty	otoscope		

1. _____ a thermometer which is inserted into the patient's mouth.
2. _____ a person who speaks many tongues.
3. _____ an instrument used in examining the ears.
4. _____ a disease of the vocal cords.
5. _____ a doctor who specializes in the treatment and care of the eyes.
6. _____ a tumor located on the lip.
7. _____ a doctor who treats and cares for the teeth.
8. _____ a large head.
9. _____ an operation on the nose.
10. _____ a disease of the brain.

SCIENTIFIC SUFFIXES

A suffix is an attachment at the end of a word. It can be a syllable, group of syllables or a word added to the base word to change its meaning. Below are some scientific suffixes and their meanings. Fit them into the sentences on the next page. Each is used only once.

-ion, sion	act of doing
-ology	study of
-scope	for viewing, observing
-graph	writing
-somatic	of the body
-cyte	cell
-toxin	poison
-phobia	fear of
-ist	a person who practices
-path	sickness of
-ectomy	to cut out of
-itis	inflammation of
-habit	live
-lysis	dissolve, separate
-algia	pain
-oma	tumor

SCIENTIFIC SUFFIXES (Cont'd.)

1. The accused criminal took a poly _____ test.
2. The surgeon performed an emergency append _____ early this morning.
3. The bored woman appeared to have many psycho _____ illnesses.
4. Many animals will not co _____ the same territory.
5. The medical student needs to study bacteri_____.
6. The kidney patient receives dia _____ treatments on a regular basis.
7. Rattlesnake poison is a hemo_____.
8. An increase in leuco _____ count can be dangerous.
9. Twice a year visits to a dent_____ are sufficient for most people.
10. Hepat _____ is a serious disease of the liver.
11. In a hematology laboratory, good micro _____ are necessary.
12. Neur _____ is a painful disease of the nerves.
13. If the silly accident had been avoided, the lacerat _____ of the boy's scalp would not have happened.
14. It was a great relief to know the fibr _____ was benign.
15. The closing of the elevator's doors gave the man instant claustro_____.
16. The cruel crime was thought to be the work of a psycho _____.

WHICH SPECIALIST WOULD YOU CALL?

The Jones family is large, and over the years they have had many opportunities to call on medical specialists. A specialist is a Doctor of Medicine who has received additional training in a particular field. When the Jones family needs special care they know which doctor to call. Do you? See if you can match the specialist to the situation.

SPECIALISTS:

Dermatologist
Ophthalmologist
Orthopedic Surgeon
Pediatrician
Otolaryngologist
Geriatrician
Obstetrician
Allergist
Cardiologist
Gastroenterologist
Plastic Surgeon
Endocrinologist

WHICH SPECIALIST WOULD YOU CALL? (Cont'd.)

1. Grandpa Jones had a heart attack several years ago; he's doing fine but still sees his _____ on a regular basis.

2. Mike Jones broke his collar bone playing baseball last summer; his mother took him to an _____.

3. Georgie Jones broke his nose; he wants it just the way it was before his accident; he has an appointment with a _____.

4. Julie Jones is a teenager with acne. She is being treated by a _____.

5. Grandma Jones is forgetful and complains of many old age aches and pains. Her doctor is a _____.

6. Sally Jones can't read the writing on the chalkboard in school and her grades are slipping. Her eyes need to be checked by an _____.

7. Greg Jones sneezes whenever a cat appears on the scene. He was tested by an _____.

8. Mother Jones is expecting again; she visits an _____ regularly.

9. Aunt Linda, the school teacher, has an ulcer. Can a _____ help her?

10. Uncle Ted is a diabetic. His doctor is an _____.

11. Suzie Jones gets earaches every winter. When these occur she makes an appointment with her _____.

12. Sean Jones is only two; his specialist is called a _____.

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SCIENCE ANALOGIES

An analogy shows a similarity by making a comparison.

Example: hand : glove :: foot : shoe

Two dots stand for the words *is to,* and four dots stand for the word *as.*

There are many kinds of analogies. Here is an example of another type:

Dickens : *Oliver Twist* :: Stevenson : *Treasure Island*

Become acquainted with the term analogy by solving the science analogies below.

1. hand : arm :: foot : _____
2. retina : eye :: cochlea : _____
3. sulfuric acid : base :: ammonia : _____
4. lung : air :: heart : _____
5. Botany : plants :: _____ : animals
6. cell : brick :: tissue : _____
7. Galileo : telescope ::Leeuwenhoek: _____
8. Newton : gravity :: _____ : heredity
9. Pasteur : France :: Pavlov : _____
10. humerus : arm :: _____ : leg
11. brain : nervous system :: _____ : circulatory system
12. microscope : cell :: _____ : star
13. egg : ovary :: _____ : testis
14. feathers : bird :: scales : _____

After completing these analogies, try to make up some of your own.

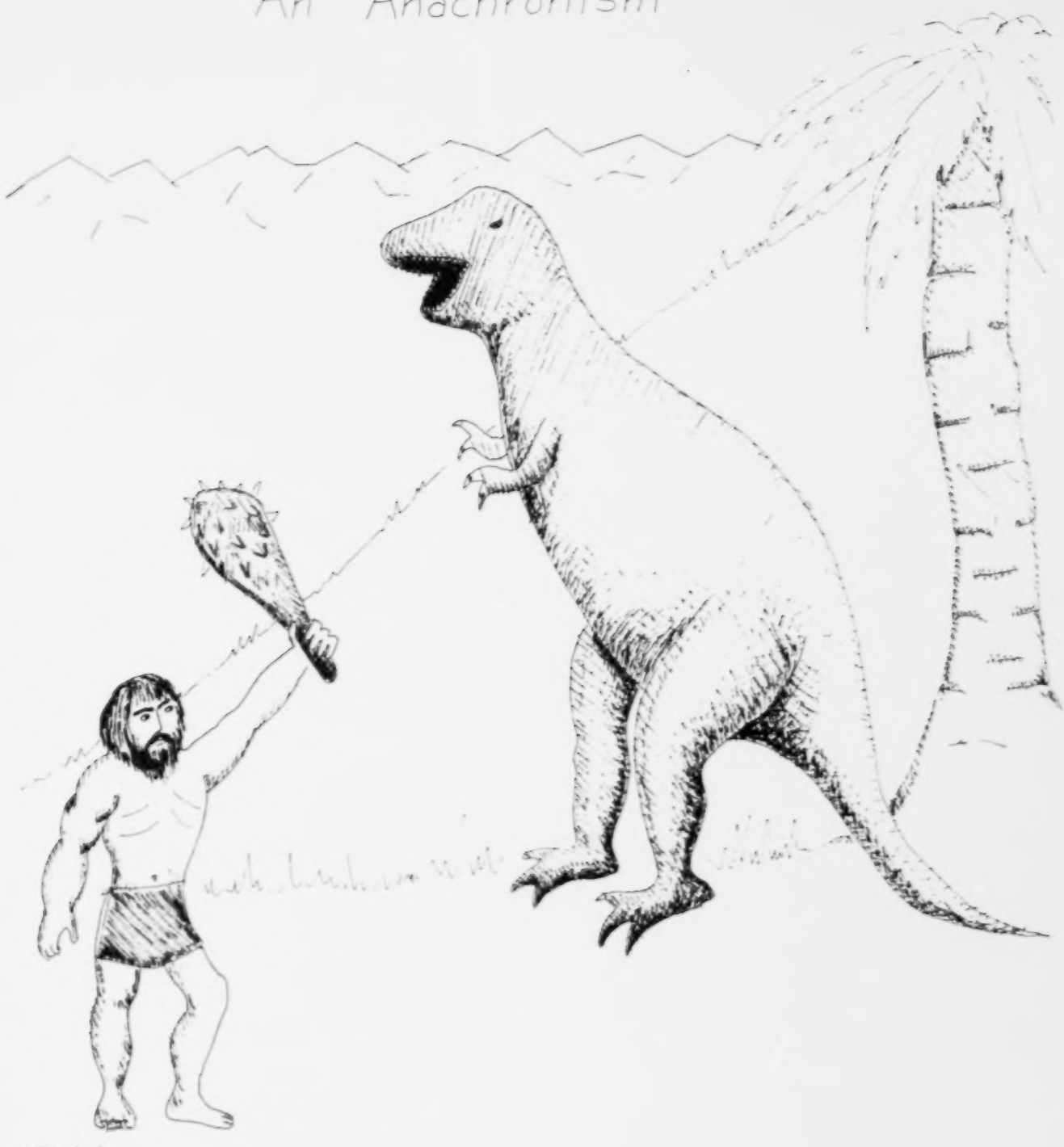
AN ANACHRONISM

An anachronism is an error in time. In an anachronism two or more events are depicted, one of which is incorrect time wise. For example, an astronaut would be incongruous or out of place in the Revolutionary period. The purpose of this exercise is to learn the meaning of the term anachronism and to apply its meaning to the field of science. Study the anachronism on the following page; in the space below draw an anachronism of your own.

Do an anachronism of your own.

AN ANACHRONISM (Cont'd.)

An Anachronism



Title: _____

Explain the anachronism _____

_____

_____

43

AN ANATOMY STORY

In the story below, use common terms for parts of the human body in the blanks. The picture on the following page will help you to complete the story.

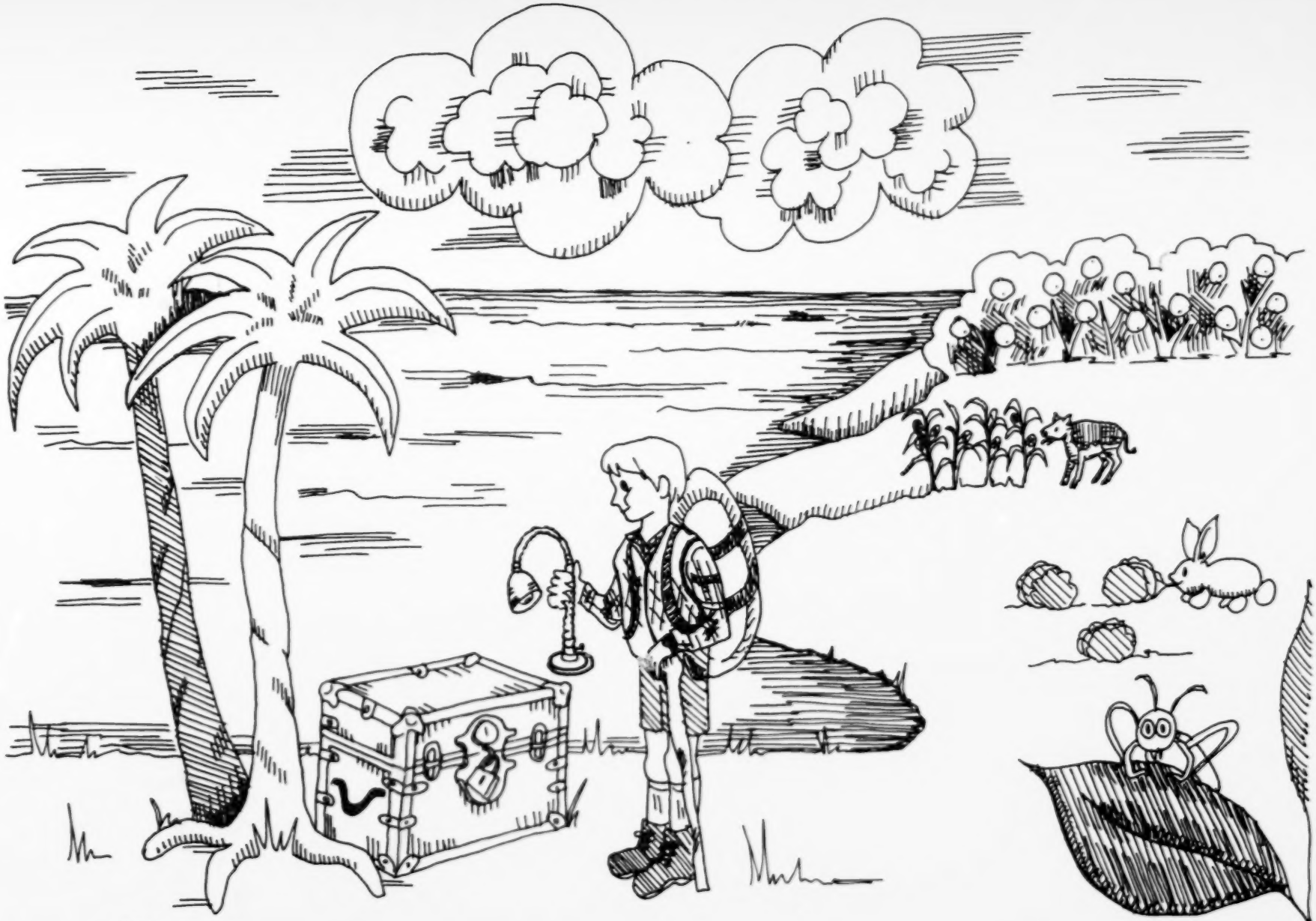
David was an intelligent boy, and although he was only (1) _____ -high to a grasshopper and his (2) _____ was sometimes in the clouds, he had a good (3) _____ for news and paid (4) _____ service to no one. He also knew how to (5) _____ a burden and tip (6) _____ quietly through the woods. That's why we elected him leader in our hunt to find the pirate's (7) _____ _____. With the aid of a goose (8) _____ lamp we located the huge (9) _____, which was fastened with iron (10) _____, lying near the (11) _____ of a river between a stand of swaying (12) _____ trees and a grove of (13) _____ orange trees. Nearby, a small (14) _____ _____nibbled contentedly on an (15) _____ of corn while a (16) _____ _____ chewed a (17) _____ of lettuce.

After a while, the (18) _____ of David's watch told us it was time to go (19) _____ to our homes.

In the above story you have seen how words can be used in different ways sometimes with different meanings. Make a list of words you know which can have two or more different meanings.

44

AN ANATOMY STORY (Cont'd.)



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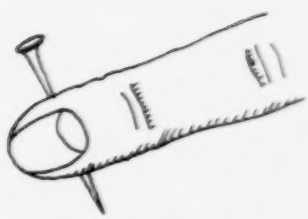
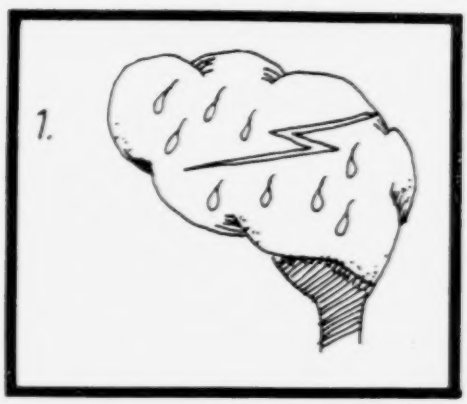
"LITERALLY SPEAKING"

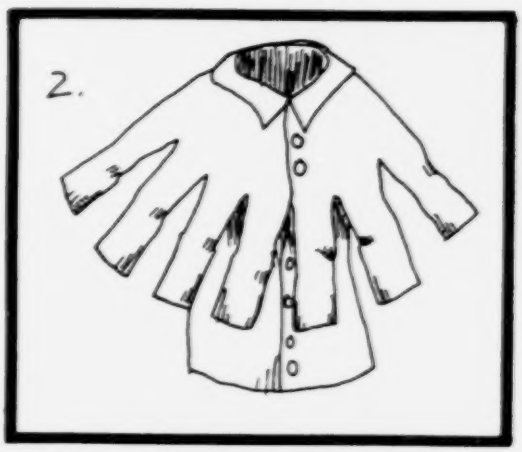
"Literally speaking" means to take a word at its original or dictionary meaning. People who are learning a new language sometimes have difficulty understanding expressions which are not meant to be taken literally. The amusing drawings below depict body parts in literal expressions. Can you identify the popular expression suggested by each drawing?

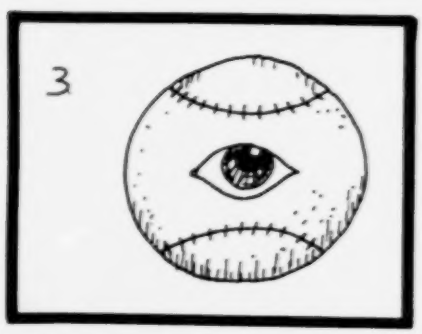
Example:



Expression: Fingernail







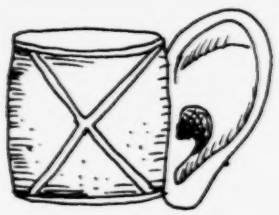
47

"LITERALLY SPEAKING" (Cont'd.)

5.

6.

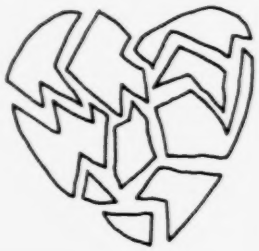
8.



7.

9.

10.



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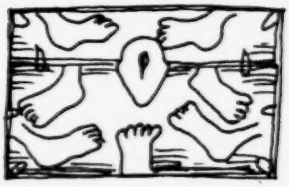
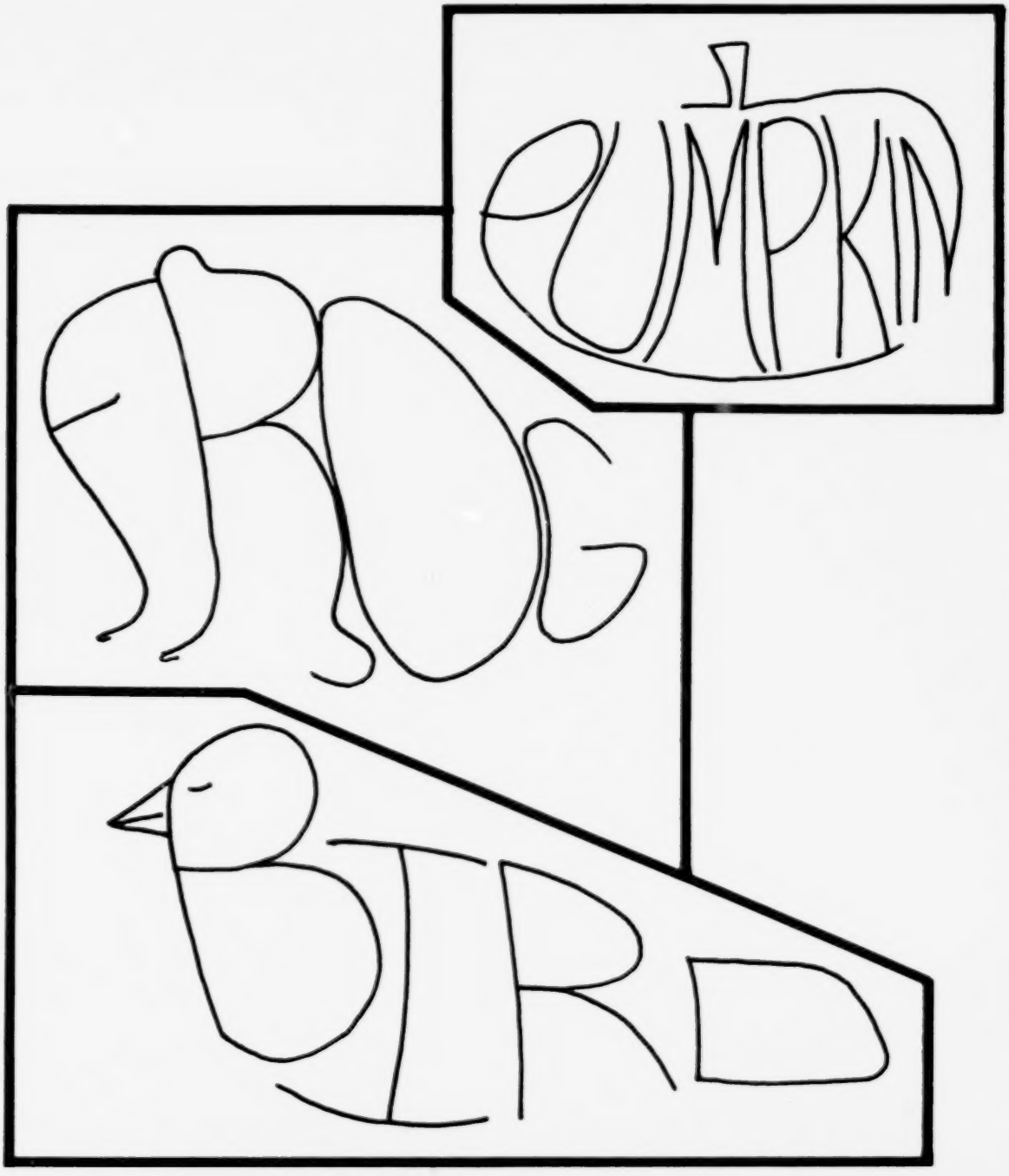


12.

ANIMAL AND PLANT ART WORDS

When some letters of a word suggest a picture the result is an art word. Here are some examples of art words which you can easily identify, but can you use the letters in the name of a plant or animal to make an art word? It may take a little practice, but you should soon be able to do art words of your own.

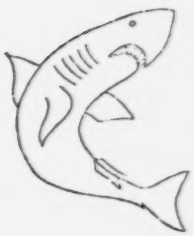


ANSWER KEY

Page 16: Artgraph

Page 18: Artgraph

Page 20: Artgraph



Page 25: Medical Prefixes

1. Cardiologist
2. Hypertension
3. Antibiotic
4. Otoscope
5. Hepatitis
6. Malaria
7. Gastric
8. Pneumonia
9. Neurosurgeons
10. Rhinoplasty
11. Reniform
12. Hypoglycemia
13. Hysterectomy
14. Podiatrist
15. Toxic
16. Psychosomatic

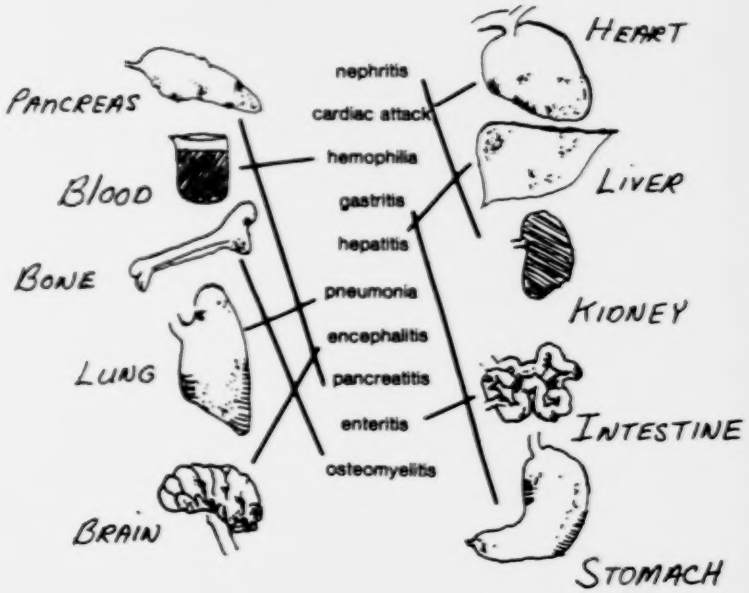
Page 26: Color Prefixes

1. Glaucoid
2. Erythrocyte
3. Chlorine
4. Leucocyte
5. Xanthodermic
6. Melanocyte
7. Cyanic

Page 28: Scientific Symbols

1. ♇
2. †
3. ∢
4. ⇌
5. ♂
6. ◻
7. ≠
8. ∞
9. ℞
10. ✳
11. F
12. ♀
13. ○
14. °
15. HP
16. μ
17. ∠
18. ℨ
19. g (rad)
20. ⚕

Page 30: Organ Prefixes



ANSWER KEY (cont'd.)

Page 32: Prefixes Relating to the Head

1. Oral
2. Linguist
3. Otoscope
4. Laryngitis
5. Ophthalmologist
6. Labioma
7. Dentist
8. Megacephalic
9. Rhinoplasty
10. Encephalitis

Page 34: Scientific Suffixes

1. Polygraph
2. Appendectomy
3. Psychosomatic
4. Cohabit
5. Bacteriology
6. Dialysis
7. Hemotoxin
8. Leucocyte
9. Dentist
10. Hepatitis
11. Microscopes
12. Neuralgia
13. Laceration
14. Fibroma
15. Claustrophobia
16. Psychopath

Page 36: Which Specialist Would You Call?

1. Cardiologist
2. Orthopedic Surgeon
3. Plastic Surgeon
4. Dermatologist
5. Geriatrician
6. Ophthalmologist
7. Allergist
8. Obstetrician
9. Gastroenterologist
10. Endocrinologist
11. Otolaryngologist
12. Pediatrician

Page 37: Science Analogies

1. Leg
2. Ear
3. Acid (opposites)
4. Blood
5. Zoology
6. Wall
7. Microscope
8. Mendel (Laws)
9. Russia (country of birth)
10. Femur (upper bone)
11. Heart
12. Telescope
13. Sperm
14. Fish

Page 39: An Anachronism

The error in time is that cavemen and dinosaurs did not coexist at the same time.

Page 40: An Anatomy Story

(1) knee-high
(2) head
(3) nose
(4) lip
(5) shoulder
(6) tiptoe
(7) chest or trunk
(8) gooseneck
(9) chest or trunk
(10) nails
(11) mouth
(12) palm
(13) navel
(14) calf
(15) ear
(16) hare (hair)
(17) head
(18) arms or hands
(19) back

Page 42: "Literally Speaking"

1. Brainstorm
2. Coat of arms
3. Eyeball
4. All ears
5. Footnote
6. Funny bone
7. Kneecap
8. Eardrum
9. All thumbs
10. Broken heart
11. Footlocker
12. All smiles

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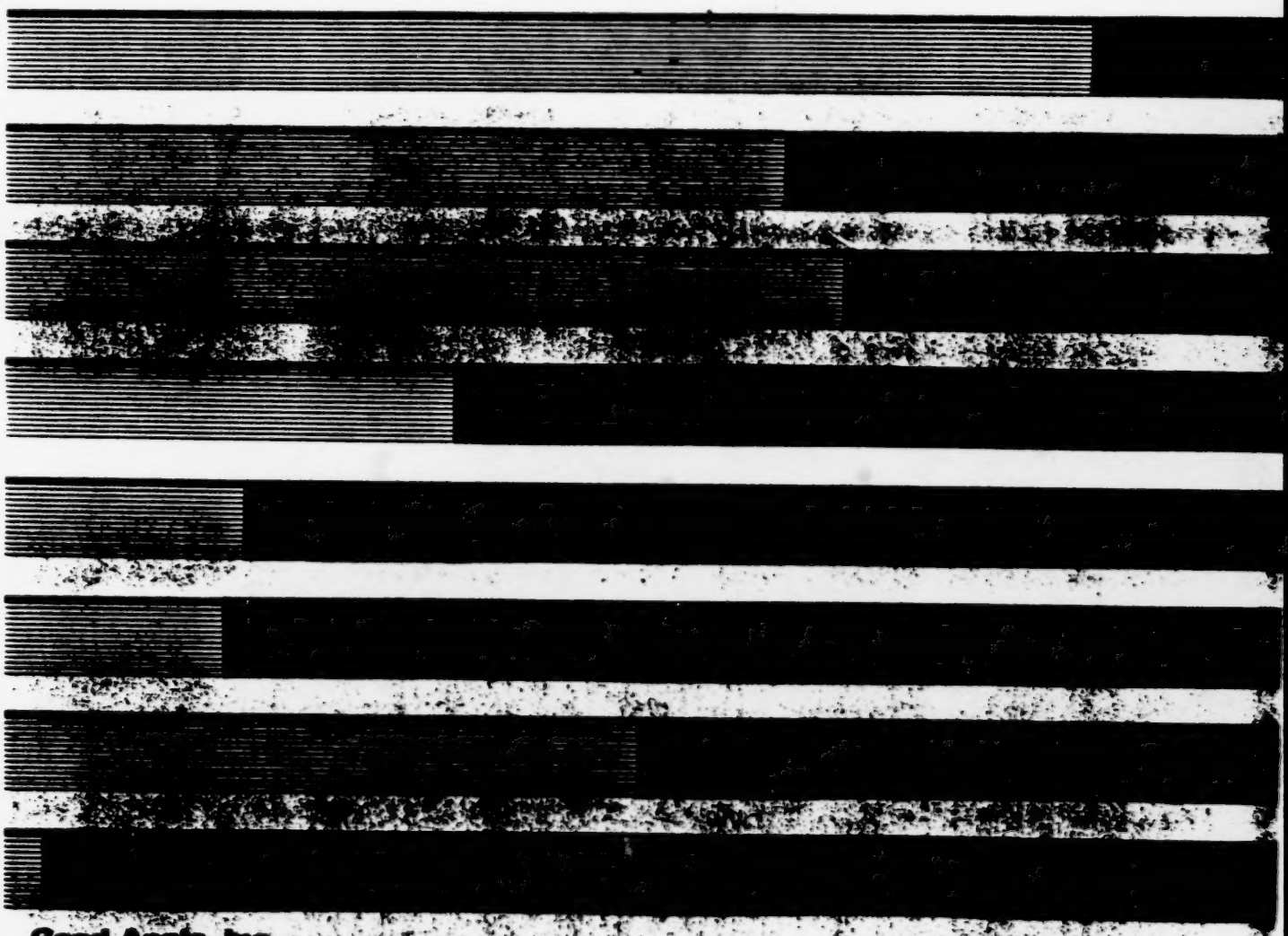

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